

## CLEANING WIPER AND CLEANING METHOD FOR INSIDE MICROWAVE OVEN UTILIZING CLEANING WIPER

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### Abstract of JP10314092

**PROBLEM TO BE SOLVED:** To effectively clean and wipe the inside of a microwave oven by holding in a cleaning wiper a liquid cleaner which evaporates through heating and by weakening the adhesive strength of the soil and dirt adhered inside the microwave oven through the moisture absorbed vapor of the liquid cleaner and afterwards by making it possible to wipe off lightly.

**SOLUTION:** As a cleaning wiper, a raw material which can absorb a liquid and which does not melt by heat, goods made of, for example, non-woven cloth, cloth, cotton paper, are utilized. As a liquid cleaner, a product which contains a cleaning agent in a liquid non-toxic to be used within the microwave oven, with a further addition of a touch of essence, is utilized. As a liquid essence, a natural essence is preferable and orange essential oil, lemon essential oil or the like is used. In cleaning a microwave oven, the cleaning wiper is housed inside the microwave oven and heated with the liquid cleaning agent to be evaporated, the vapor is absorbed by the soil adhered to the inside surface of the microwave oven and the adhesive strength onto the surface is weakened. Afterwards, the inside of the microwave oven is wiped off with the cleaning wiper.

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(54) 【発明の名称】 清拭具及び該清拭具を利用してなる電子レンジ内の清拭方法

(57) 【要約】

【課題】電子レンジ内に付着した汚れに吸湿させ、内面への付着力を弱くして軽く拭き取ることができるとともに、電子レンジ内に滞留する臭気をも払拭でき、且つ予め清拭具材に水や洗剤を染み込ませる等といった作業が不必要となる清拭具及び該清拭具を利用してなる電子レンジ内の清拭方法を提供することにある。

【解決手段】清拭具材に加熱によって蒸発する液体洗浄剤を保持させてなる。

## 【特許請求の範囲】

【請求項1】 清拭具材に加熱によって蒸発する液体洗淨剤を保持させてなる清拭具。

【請求項2】 清拭具材として、不織布、布、発泡合成樹脂、綿、紙の内から選んだものから作製したものを利用してなる請求項1記載の清拭具。

【請求項3】 清拭具材として、液体を吸収し得るものを利用してなる請求項1又は2記載の清拭具。

【請求項4】 液体洗淨剤として、液体香料を含有させたものを利用してなる請求項1、2又は3記載の清拭具。

【請求項5】 液体洗淨剤として、毒性のない液体と洗剤とよりなるものを利用してなる請求項4記載の清拭具。

【請求項6】 液体洗淨剤として、天然香料を利用してなる請求項5記載の清拭具。

【請求項7】 天然香料として、オレンジ油、レモン油、マンダリン油、ライム油、ベンガモット油、カラウェー油、ウイキョウ油、セロリー種子油、カルダモン油、キャロット種子油、グレープフルーツ油等のリモネン成分を含有したものの内から選んだ1種又は2種以上混合したものを利用してなる請求項6記載の清拭具。

【請求項8】 清拭具材に加熱によって蒸発する液体洗淨剤を保持させてなる清拭具を電子レンジ内に収納して加熱して液体洗淨剤を蒸発させ、その後、前記清拭具を用いて電子レンジ内を清拭することを特徴とする電子レンジ内の清拭方法。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、主として家庭用の電子レンジ（電子オーブンレンジを含む）内に付着した汚れ、特に油污れを清拭するために用いられる清拭具及び該清拭具を利用してなる電子レンジ内の清拭方法に関する。

## 【0002】

【従来の技術】昨今、冷凍食品や調理済みの加工食品等の普及は著しく、これらの食品を美味しく食するためには電子レンジはなくてはならないものであって、従来より増して使用価値が高まりつつある。反面、使用頻度が多くなればなるほど、電子レンジ内がすぐに汚れ、特に油成分等が壁面に付着したまま放置しておくと、頑固な汚れとなってその清拭作業は極めて厄介である。そこで、電子レンジ内を清拭する方法としては、「台所用ふきん等に水や洗剤を染み込ませ、そのまま拭き取る方法」、「洗淨用スポンジに吸水して、これで拭き取る方法」といった古典的な手法が用いられている。

【0003】しかしながら、前者の「台所用ふきん等に水や洗剤を染み込ませ、そのまま拭き取る方法」では、台所用ふきん等に水や洗剤を染み込ませるといった作業が必要であるうえに、拭き取る力もかなり要求され、且

つ電子レンジ内に滞留する臭気も払拭できない。また清拭作業後は、使用した台所用ふきん等を洗濯或いは、汚れがひどい場合は廃棄しなければならない、清拭作業時毎に台所用ふきん等が必要となるといった欠点があった。

【0004】後者の「洗淨用スポンジに吸水して、これで拭き取る方法」では、汚れがとれにくいのみならず、ブラシ面がついている洗淨用スポンジを用いると、電子レンジの内面に傷がついたりする。また前者同様、拭き取る力もかなり要求され、且つ電子レンジ内に滞留する臭気も払拭できないといった欠点があった。

## 【0005】

【発明が解決しようとする課題】そこで本発明は以上のような状況に鑑みてなされたものであり、その目的とするところは、電子レンジ内に付着した汚れに吸湿させ、内面への付着力を弱くして軽く拭き取ることができるとともに、電子レンジ内に滞留する臭気をも払拭でき、且つ予め清拭具材に水や洗剤を染み込ませる等といった作業が不要となる清拭具及び該清拭具を利用してなる電子レンジ内の清拭方法を提供することにある。

## 【0006】

【課題を解決するための手段】本発明者は前述の課題解決のために鋭意研究を行った結果、清拭具材に加熱によって蒸発する液体洗淨剤を保持させてなることにより、上記目的を達成できることを見出し、本発明を完成するに至った。

【0007】そして清拭具材としては、液体を吸収でき、熱によって溶けたり、拭き掃除に使用できない程に乾化しない基材、例えば不織布、布、発泡合成樹脂、綿、紙等の内から選んだものから作製したものを利用することが好ましい。

【0008】また液体洗淨剤としては、電子レンジ中で用いて毒性がない液体を用いてこの中に洗淨成分を含有させてなるものであり、更にこの中に香料を含有させたものを利用することが考えられる。

【0009】そして液体香料としては、天然香料を用いるのが望まれる。

【0010】ここに天然香料としては、オレンジ油、レモン油、マンダリン油、ライム油、ベンガモット油、カラウェー油、ウイキョウ油、セロリー種子油、カルダモン油、キャロット種子油、グレープフルーツ油等のリモネン成分を含有する植物系オイル、特にオレンジ系オイルから選んだ1種又は2種以上混合したものが利用できる。

【0011】そして、この清拭具材に加熱によって蒸発する液体洗淨剤を保持させてなる清拭具を電子レンジ（電子オーブンレンジを含む）内に収納して加熱するとともに、蒸発させ、この蒸気をレンジ内面に付着する汚れに対し吸収させ、内面への付着力を弱くさせる。このとき、少なくとも前記清拭具を湿润状態で蒸発させるとこの後の清拭作業に好ましい。次いで、加熱蒸発後に前

記清拭具を用いて電子レンジ内を清拭することを特徴とする電子レンジ内の清拭方法をも、同時に提案するものである。

#### 【0012】

【発明の実施の形態】以下、本発明の清拭具及び該清拭具を利用してなる電子レンジ内の清拭方法を具体化した実施の形態について説明する。

【0013】本発明によって開発された清拭具は、加熱によって蒸発し得る液体洗浄剤を清拭具材に保持させることを特徴とするものである。清拭具材は、液体を吸収でき、熱によって溶けたり、拭き掃除に使用できない程に乾化しない基材、例えば不織布、布、発泡合成樹脂、綿、紙等の内から選んだものから作製したものを利用することが可能であるが、その中でも本実施品は、防縮性、防シワ性、耐水耐溶剤性に優れ、強度も大で、軽くて通気性が良い等の利点から不織布を採用するものである。

【0014】採用する不織布は、綿等の天然繊維、レーヨン等の合成繊維、ビニロン、ポリエステル等の合成繊維から乾式或いは湿式で製造したもののいずれを使用してもよく、寸法は縦が約200mm、横が約300mm、厚みが約0.3mmを標準とするものであるが、適宜変更可能であるということも言うまでもない。特に、厚みに関しては最大1mm程度まで厚肉とすることも考慮される。

【0015】そして液体洗浄剤は、水(X)が $100 > X \geq 80$ 重量%、界面活性剤(Y)が $0 < Y \leq 10$ 重量%、液体香料(Z)が $0 < Z \leq 10$ 重量%からなるものであって、界面活性剤は電氣的性質によって大きく四種類に分けられるが、その中でも少量で汚れが落ち、且つ

(実施例1、実施例2、実施例3)

#### 液体洗浄剤

①水	99.98重量%
②界面活性剤(ポリオキシエチレンアルキルエーテル)	0.01重量%
③液体香料(オレンジ油)	0.01重量%

#### 加熱時間

・10秒 ・40秒 ・90秒

上記配合による液体洗浄剤を不織布に含浸させてなる単位清拭具を、電子レンジ内に収納して10秒間加熱した。そして加熱後に前記清拭具をそのまま用いて電子レンジ内の清拭作業を行った。(実施例4、実施例5、実施例6)

洗浄効果を高める等の利点から、非イオン系界面活性剤を採用し、特にヤシの実油やオレンジ油等の天然油を原料としてなるポリオキシエチレンアルキルエーテルを使用することが望ましい。尚、界面活性剤と液体香料は、共に10重量%を超える配合量であっても許容されるものである。

【0016】また液体香料は、合成香料も使用可能であるが、人体に影響が少なく、且つ油性を溶かして洗浄力も発揮し得る天然香料を利用することが望ましい。従って、天然香料として、オレンジ油、レモン油、マンダリン油、ライム油、ベンガモット油、カラウエー油、ウイキョウ油、セロリー種子油、カルダモン油、キャロット種子油、グレープフルーツ油等から選んだ1種又は2種以上混合したものを利用することができる。そして上記いずれの天然香料にもリモネンが含有しており、中でもオレンジ油の約90%がリモネンであり、消臭効果のみならず洗浄効果をも併せ持っている。更にコスト的にも他の天然香料と比して割安である。

【0017】ここで、本発明の清拭具は、予め不織布等の単位清拭具材に液体洗浄剤を保持させたものを適宜枚数を束ね、取り出し開口部を有するアルミ蒸着包装体に内装したものを想定するものであるが、単位清拭具材毎にアルミ蒸着包装したものも適宜採用し得る。

【0018】次に、本発明の清拭具を利用してなる電子レンジ内の清拭方法の実施例を示す。使用する清拭具材としては、不織布(縦が約200mm、横が約300mm、厚みが約0.3mm)を用い、界面活性剤には、ポリオキシエチレンアルキルエーテルを用い、液体香料には、オレンジ油を用いた。

#### 【0019】

レンジ内の清拭作業を行った。(実施例1)

同様にして、加熱時間を40秒(実施例2)、90秒(実施例3)としたものを順次行った。

#### 【0020】

#### 液体洗浄剤

①水	99.80重量%
②界面活性剤(ポリオキシエチレンアルキルエーテル)	0.10重量%
③液体香料(オレンジ油)	0.10重量%

#### 加熱時間

・10秒 ・40秒 ・90秒

上記配合による液体洗浄剤を不織布に含浸させてなる単位清拭具を、電子レンジ内に収納して10秒間加熱した。そして加熱後に前記清拭具をそのまま用いて電子レンジ内の清拭作業を行った。(実施例4)

(実施例7、実施例8、実施例9)

#### 液体洗浄剤

①水	98.00重量%
②界面活性剤(ポリオキシエチレンアルキルエーテル)	1.00重量%
③液体香料(オレンジ油)	1.00重量%

#### 加熱時間

・10秒 ・40秒 ・90秒

上記配合による液体洗浄剤を不織布に含浸させてなる単位清拭具を、電子レンジ内に収納して10秒間加熱した。そして加熱後に前記清拭具をそのまま用いて電子レ

(実施例10、実施例11、実施例12)

同様に、加熱時間を40秒(実施例5)、90秒(実施例6)としたものを順次行った。

【0021】

ンジ内の清拭作業を行った。(実施例7)

同様に、加熱時間を40秒(実施例8)、90秒(実施例9)としたものを順次行った。

【0022】

#### 液体洗浄剤

①水	80.00重量%
②界面活性剤(ポリオキシエチレンアルキルエーテル)	10.00重量%
③液体香料(オレンジ油)	10.00重量%

#### 加熱時間

・10秒 ・40秒 ・90秒

上記配合による液体洗浄剤を不織布に含浸させてなる単位清拭具を、電子レンジ内に収納して10秒間加熱した。そして加熱後に前記清拭具をそのまま用いて電子レンジ内の清拭作業を行った。(実施例10)

同様に、加熱時間を40秒(実施例11)、90秒(実施例12)としたものを順次行った。

【0023】(比較例)使用する清拭具は、株式会社グイエー製(1997年製、商品名:セービング)のウェットティッシュを用いた。

成分:水、エタノール、プロピレングリコール等

#### 加熱時間

・40秒

上記のウェットティッシュを一枚取り出し、電子レンジ内に収納して40秒間加熱した。そして加熱後に前記ウェットティッシュをそのまま用いて電子レンジ内の清拭作業を行った。以上の実施例1~12及び比較例の結果を表1に示した。

【0024】

【表1】

実施例 番号	液体洗淨剤 (重量%)			加熱時間 (秒)	試 験 結 果		
	水	界面活性剤	液体香料		消 臭	汚れ落ち度	不織布の状態
1	99.98	0.01	0.01	10	B	B	湿潤状態
2	99.98	0.01	0.01	40	A	A	ほぼ湿潤状態
3	99.98	0.01	0.01	90	A	A	乾燥状態
4	99.80	0.10	0.10	10	B	B	湿潤状態
5	99.80	0.10	0.10	40	A	A	ほぼ湿潤状態
6	99.90	0.10	0.10	90	A	A	乾燥状態
7	98.00	1.00	1.00	10	B	B	湿潤状態
8	98.00	1.00	1.00	40	A	A	ほぼ湿潤状態
9	98.00	1.00	1.00	90	A	A	乾燥状態
10	80.00	10.00	10.00	10	B	B	湿潤状態
11	80.00	10.00	10.00	40	A	A	ほぼ湿潤状態
12	80.00	10.00	10.00	90	A	A	乾燥状態
比較例	—	—	—	40	C	B	ほぼ湿潤状態

(評価基準) A: 優れている  
B: やや優れている  
C: 劣っている

【0025】表1より明かなように、実施例1、4、7、10は、加熱時間が短いために、不織布に含浸させているオレンジ油が十分に蒸発分散しないが、消臭効果はやや優れた結果を得た。また汚れ落ち度も、蒸発量が少ないために、電子レンジ内の内壁に分散付着する量が少ないが、やや優れた結果を得た。

【0026】表1より明かなように、実施例3、6、9、12は、加熱時間が長いために、不織布に含浸させている液体洗淨剤が全て蒸発分散してしまうため、消臭効果及び汚れ落ち度は優れているものの、不織布が乾燥しているので、拭き取り時に少し不便であるか又は別の清拭具が必要となったが、全般的には優れた結果を得た。

【0027】表1より明かなように、実施例2、5、8、11は、消臭効果及び汚れ落ち度共に優れ、総合的に満足いく結果が得られた。従って、加熱時間を40秒と設定することにより、不織布に含浸している液体洗淨剤が適度に蒸発分散して、電子レンジの内面に付着する汚れに対し吸収させ、内面への付着力を弱くし、頑固な油污れを拭き取り易い状態とすることができるとともに、電子レンジ内に滞留する臭気をも払拭でき、且つ予め清拭具材に水や洗剤を染み込ませる等といった作業が不必要となる本願の目的が達成できた。

【0028】表1より明かなように、比較例は、実施例1～12を参考にし、最適加熱時間である40秒にて試験を行ったが、消臭効果及び汚れ落ち度共に、満足いく結果が得られなかった。

【0029】

【発明の効果】本発明は、以上説明したように構成されているので、以下に記載されるような効果を奏する。本発明の清拭具によれば、清拭具材に加熱によって蒸発する液体洗淨剤を保持させてなるものであるため、洗淨作用と消臭作用を兼ね備えるもので、一般清掃用として利用できることは勿論のこと、電子レンジ内の清拭用として優れた効力を発揮するものである。そしてこの清拭具を用いた電子レンジ内の清拭方法によれば、液体洗淨剤は、界面活性剤のみならず液体香料（特に、オレンジ油）を含有させていることにより、蒸発分散した液体香料が電子レンジ内に付着した汚れに吸湿させ、内面への付着力を弱くして軽く拭き取ることができるとともに、電子レンジ内に滞留する臭気をも払拭でき、且つ予め清拭具材に水や洗剤を染み込ませる等といった作業が不必要となり作業能率が向上する。尚、本明細書中の清拭具は、主に電子レンジ内の清拭用として詳述したが、電子レンジまわり、冷蔵庫内、台所用具等の洗淨用に、また調度品、手拭き等に広く使用することができる。

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CLAIMS

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[Claim(s)]

[Claim 1] The toilet implement which makes it come to hold the liquid cleaning agent which evaporates with heating in toilet implement material.

[Claim 2] The toilet implement according to claim 1 which comes to use what was produced from what was chosen from among a nonwoven fabric, cloth, foaming synthetic resin, cotton, and paper as toilet implement material.

[Claim 3] The toilet implement according to claim 1 or 2 which comes to use what may absorb a liquid as toilet implement material.

[Claim 4] The toilet implement according to claim 1, 2, or 3 which comes to use the thing which made liquid perfume contain as a liquid cleaning agent.

[Claim 5] The toilet implement according to claim 4 which comes to use what consists of a liquid without toxicity, and a detergent as a liquid cleaning agent.

[Claim 6] The toilet implement according to claim 5 which comes to use natural aromatic as a liquid cleaning agent.

[Claim 7] The toilet implement according to claim 6 which comes to use one sort chosen from inside as natural aromatic although limonene components, such as orange oil, lemon oil, mandarin oil, lime oil, a BENGAL motto oil, caraway oil, fennel oil, celery seed oil, cardamom oil, carrot oil, and grapefruit oil, were contained, or the thing mixed two or more sorts.

[Claim 8] The toilet approach in the microwave oven characterized by containing and heating the toilet implement which makes it come to hold the liquid cleaning agent which evaporates with heating in toilet implement material in a microwave oven, evaporating a liquid cleaning agent, and carrying out the toilet of the inside of a microwave oven after that using said toilet implement.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the toilet approach in the microwave oven which comes to use the toilet implement and this toilet implement which are used in order to carry out the toilet of the dirt which adhered mainly in the microwave oven (an electronic microwave oven is included) for home use, especially the oil dirt.

[0002]

[Description of the Prior Art] The spread of frozen foods, precooked processed foods, etc. is remarkable, in order to eat such food deliciously, a microwave oven is indispensable, an increase is carried out conventionally and value in use is increasing these days. Indeed, if operating frequency increases on the other hand, if the inside of a microwave oven leaves it while dirt, especially an oil component, etc. had adhered to the wall surface immediately, it becomes stubborn dirt and the toilet activity is very troublesome. Then, as an approach of carrying out the toilet of the inside of a microwave oven, classic technique, such as "the approach of a base business dishcloth etc. infiltrating water and a detergent and wiping off as it is" and the "approach of absorbing water to the sponge for washing and wiping off now", is used.

[0003] However, by the former "approach which a base business dishcloth etc. infiltrates water and a detergent and is wiped off as it is", neither the force wiped off to on [ to be worked / of infiltrating water and a detergent ] a base business dishcloth etc., nor the odor which is required considerably and piles up in a microwave oven can be wiped away. Moreover, the base business dishcloth which used after the toilet activity had to be discarded when wash or dirt was severe, and there was a fault that a base business dishcloth etc. was needed for every time of a toilet activity.

[0004] By the latter "approach which absorbs water to the sponge for washing and is wiped off now", if the sponge for washing which the brush side attaches is used, a blemish will be sufficient for the inner surface of a microwave oven just, and it can not only be hard to take dirt, but it will make it it. Moreover, there was a fault that neither the force to wipe off nor the odor which is required considerably and piles up in a microwave oven as well as the former could be wiped away.

[0005]

[Problem(s) to be Solved by the Invention] Then, the place which this invention is made in view of the above situations, and is made into the object While being able to make the dirt which adhered in the microwave oven able to absorb moisture, being able to weaken the adhesion force to an inner surface and being able to wipe off lightly The odor which piles up in a microwave oven can also be wiped away, and it is in offering the toilet approach in the microwave oven which comes to use the toilet implement and this toilet implement with which the activity of infiltrating water and a detergent into toilet implement material beforehand etc. becomes unnecessary.

[0006]

[Means for Solving the Problem] this invention person came to complete a header and this invention for the ability of the above-mentioned object to be attained by making it come to hold the liquid cleaning agent which evaporates with heating in toilet implement material, as a result of inquiring wholeheartedly for the above-mentioned technical-problem solution.

[0007] And it is so desirable that a liquid is absorbable, and it cannot melt with heat or cannot be used for wiping as toilet implement material to use what was produced from what was chosen from



from among the base material which is not \*\*ized, for example, a nonwoven fabric, cloth, foaming synthetic resin, cotton, paper, etc.

[0008] Moreover, it is possible to use the thing which made it come using the liquid which uses in a microwave oven and does not have toxicity as a liquid cleaning agent to contain a washing component in this, and made perfume contain in this further.

[0009] And to use natural aromatic is desired as liquid perfume.

[0010] As natural aromatic, one sort chosen from the vegetable system oil containing limonene components, such as orange oil, lemon oil, mandarin oil, lime oil, a BENGAL motto oil, caraway oil, fennel oil, celery seed oil, cardamom oil, carrot oil, and grapefruit oil, especially Orange system oil or the thing mixed two or more sorts can be used here.

[0011] And while containing and heating the toilet implement which makes it come to hold the liquid cleaning agent which evaporates with heating in this toilet implement material in a microwave oven (an electronic microwave oven is included), make it evaporate, this steam is made to absorb to the dirt adhering to a range inner surface, and the adhesion force to an inner surface is weakened. At this time, when said toilet implement is evaporated in a damp or wet condition at least, it is desirable to a next toilet activity. Subsequently, the toilet approach in the microwave oven characterized by using said toilet implement and carrying out the toilet of the inside of a microwave oven after heating evaporation is also proposed simultaneously.

[0012]

[Embodiment of the Invention] The gestalt of the operation which materialized hereafter the toilet approach in the microwave oven which comes to use the toilet implement and this toilet implement of this invention is explained.

[0013] The toilet implement developed by this invention is characterized by making it come to hold the liquid cleaning agent which may evaporate with heating to toilet implement material. Although it can so use what was produced from what was chosen from from among the base material which is not \*\*ized, for example, a nonwoven fabric, cloth, foaming synthetic resin, cotton, paper, etc. that toilet implement material can absorb a liquid, and it cannot melt with heat or it cannot use it for wiping. Also in it, this operation article is excellent in shrink-proofing nature, \*\* Siwa nature, and waterproof solvent resistance, reinforcement is also size, it is light and permeability adopts a nonwoven fabric from an advantage, such as being good.

[0014] although the nonwoven fabric to adopt was manufactured with dry type or wet from synthetic fibers, such as synthetic fibers, such as natural fibers, such as cotton, and rayon, Vinylon, and polyester, any may be used, although about 200mm and width make about 0.3mm to about 300mm and thickness makes [ length ] a dimension a criterion, it can be said [ that it can change suitably and ], and things cannot be overemphasized. Supposing especially that it is heavy-gage about a maximum of 1mm about thickness is also taken into consideration.

[0015] And although water (X) consists  $100 > X \geq 80\%$  of the weight, as for a liquid cleaning agent, liquid perfume (Z) consists [ a surfactant (Y) ] of  $0 < Z \leq 10\%$  of the weight  $0 < Y \leq 10\%$  of the weight and a surfactant is roughly divided into four kinds by the electrical property. It is little also in it and it is desirable to use the polyoxyethylene alkyl ether which adopts a non-ion system surface active agent, and becomes especially considering natural oil, such as a real oil of a coconut and orange oil, as a raw material from an advantage, such as for dirt to come off and to heighten a cleaning effect. In addition, both a surfactant and liquid perfume are permitted even if it is the loadings exceeding 10 % of the weight.

[0016] Moreover, although the synthetic perfume of liquid perfume is also usable, it is desirable to use at the body the natural aromatic which there is little effect, and melts oiliness and can also

demonstrate a detergency. Therefore, one sort chosen from orange oil, lemon oil, mandarin oil, lime oil, a BENGAL motto oil, caraway oil, fennel oil, celery seed oil, cardamom oil, carrot oil, grapefruit oil, etc. or the thing mixed two or more sorts can be used as natural aromatic. and the above — the limonene contains in any natural aromatic, especially, about 90% of orange oil is a limonene, and it has not only the deodorization effectiveness but the cleaning effect. Furthermore, as compared with the natural aromatic of the others also in cost, it is relatively cheap.

[0017] Here, although the toilet implement of this invention assumes what carried out the inner package of the thing which made the liquid cleaning agent hold to unit toilet implement material, such as a nonwoven fabric; beforehand to the aluminum vacuum evaporation package object which has ejection opening for number of sheets in a bundle suitably, what carried out the aluminum vacuum evaporation package for every unit toilet implement material can be suitably used for it.

[0018] Next, the example of the toilet approach in the microwave oven which comes to use the toilet implement of this invention is shown: Orange oil was used for liquid perfume at the surface active agent using polyoxyethylene alkyl ether, using a nonwoven fabric (about 300mm and thickness being [ length ] about 0.3mm for about 200mm and width) as toilet implement material to be used.

[0019]

(An example 1, an example 2, example 3)

Liquid cleaning agent \*\* water A 99.98 % of the weight \*\* surface active agent (polyoxyethylene alkyl ether) 0.01 % of the weight \*\* liquid perfume (orange oil) 0.01 % of the weight Heating time and 10 seconds – 40 seconds The unit toilet implement which comes to carry out impregnation of the liquid cleaning agent by the above-mentioned combination to a nonwoven fabric for – 90 seconds was contained in the microwave oven, and was heated for 10 seconds. And after heating, said toilet implement was used as it was, and the toilet activity in a microwave oven was done. (Example 1) Similarly, what made heating time 40 seconds (example 2) and 90 seconds (example 3) was performed one by one.

[0020]

(An example 4, an example 5, example 6)

Liquid cleaning agent \*\* water A 99.80 % of the weight \*\* surface active agent (polyoxyethylene alkyl ether) 0.10 % of the weight \*\* liquid perfume (orange oil) 0.10 % of the weight Heating time and 10 seconds – 40 seconds The unit toilet implement which comes to carry out impregnation of the liquid cleaning agent by the above-mentioned combination to a nonwoven fabric for – 90 seconds was contained in the microwave oven, and was heated for 10 seconds. And after heating, said toilet implement was used as it was, and the toilet activity in a microwave oven was done. (Example 4) Similarly, what made heating time 40 seconds (example 5) and 90 seconds (example 6) was performed one by one.

[0021]

(An example 7, an example 8, example 9)

Liquid cleaning agent \*\* water A 98.00 % of the weight \*\* surface active agent (polyoxyethylene alkyl ether) 1.00 % of the weight \*\* liquid perfume (orange oil) 1.00 % of the weight Heating time and 10 seconds – 40 seconds The unit toilet implement which comes to carry out impregnation of the liquid cleaning agent by the above-mentioned combination to a nonwoven fabric for – 90 seconds was contained in the microwave oven, and was heated for 10 seconds. And after heating, said toilet implement was used as it was, and the toilet activity in a microwave oven was done. (Example 7) Similarly, what made heating time 40 seconds (example 8) and 90 seconds (example 9) was performed one by one.

[0022]

(An example 10, an example 11, example 12)

Liquid cleaning agent \*\* water 80.00 % of the weight \*\* surface active agent (polyoxyethylene alkyl ether) 10.00 % of the weight \*\* liquid perfume (orange oil) 10.00 % of the weight Heating time and 10 seconds - 40 seconds The unit toilet implement which comes to carry out impregnation of the liquid cleaning agent by the above-mentioned combination to a nonwoven fabric for - 90 seconds was contained in the microwave oven, and was heated for 10 seconds. And after heating, said toilet implement was used as it was, and the toilet activity in a microwave oven was done. (Example 10) Similarly, what made heating time 40 seconds (example 11) and 90 seconds (example 12) was performed one by one.

[0023] (Example of a comparison) The wet tissue (the product made from 1997, a trade name: saving) by Daiei, Inc. was used for the toilet implement to be used.

Component: The wet tissue of heating time and the 40-second above, such as water, ethanol, and propylene glycol, was contained in one-sheet ejection and a microwave oven, and was heated for 40 seconds. And after heating, said wet tissue was used as it was, and the toilet activity in a microwave oven was done. The result of the above examples 1-12 and the example of a comparison was shown in a table 1.

[0024]

[A table 1]

実施例 番 号	液体洗浄剤 (重量%)			加熱時間 (秒)	試 験 結 果		
	水	界面活性剤	液体香料		消 臭	汚れ落ち度	不織布の状態
1	99.98	0.01	0.01	10	B	B	湿潤状態
2	99.98	0.01	0.01	40	A	A	ほぼ湿潤状態
3	99.98	0.01	0.01	90	A	A	乾燥状態
4	99.80	0.10	0.10	10	B	B	湿潤状態
5	99.80	0.10	0.10	40	A	A	ほぼ湿潤状態
6	99.90	0.10	0.10	90	A	A	乾燥状態
7	98.00	1.00	1.00	10	B	B	湿潤状態
8	98.00	1.00	1.00	40	A	A	ほぼ湿潤状態
9	98.00	1.00	1.00	90	A	A	乾燥状態
10	80.00	10.00	10.00	10	B	B	湿潤状態
11	80.00	10.00	10.00	40	A	A	ほぼ湿潤状態
12	80.00	10.00	10.00	90	A	A	乾燥状態
比較例	—	—	—	40	C	B	ほぼ湿潤状態

(評価基準) A : 優れている  
B : やや優れている  
C : 劣っている

[0025] Although the orange oil which carries out impregnation to a nonwoven fabric did not fully carry out evaporation distribution since examples 1, 4, 7, and 10 had short heating time so that more clearly than a table 1, the deodorization effectiveness obtained the result of having excelled a little. Moreover, although the wall in a microwave oven had few amounts which carry out distributed adhesion since a dirt fault also had little evaporation, it obtained the result of having excelled a little.

[0026] Although the deodorization effectiveness and a dirt fault were excellent and another toilet implement is [ it is disadvantage for a while or ] needed at the time of wiping since the nonwoven

fabric was dry in order that all the liquid cleaning agents that carry out impregnation to a nonwoven fabric since examples 3, 6, 9, and 12 have long heating time may carry out evaporation distribution so that more clearly than a table 1, the result of having excelled generally was obtained.

[0027] Examples 2, 5, 8, and 11 were excellent in the deodorization effectiveness and a dirt fault, and the satisfaction \*\*\*\* result was synthetically obtained so that more clearly than a table 1.

Therefore, the liquid cleaning agent which has sunk into the nonwoven fabric by setting up heating time with 40 seconds carries out evaporation distribution moderately. While being able to make it able to absorb to the dirt adhering to the inner surface of a microwave oven, being able to weaken the adhesion force to an inner surface and being able to consider as the condition of being easy to wipe off stubborn oil dirt The odor which piles up in a microwave oven could also be wiped away, and the object of this application that the activity of infiltrating water and a detergent into toilet implement material beforehand etc. becomes unnecessary has been attained.

[0028] Although the example of a comparison referred to examples 1-12 and being examined in 40 seconds which is the optimal heating time, a satisfaction \*\*\*\* result was not obtained for the deodorization effectiveness and a dirt fault, so that more clearly than a table 1.

[0029]

[Effect of the Invention] Since this invention is constituted as explained above, it does so effectiveness which is indicated below. Since it is the thing which makes it come to hold the liquid cleaning agent which evaporates with heating in toilet implement material according to the toilet implement of this invention, detergency and a deodorization operation are combined and the validity which was excellent as an object for the toilet in a microwave oven is demonstrated not to mention the ability to use as an object for general cleaning. According to the toilet approach in the microwave oven using this toilet implement, and a liquid cleaning agent While the liquid perfume which carried out evaporation distribution by making not only a surface active agent but liquid perfume (especially orange oil) contain can make the dirt which adhered in the microwave oven able to absorb moisture, can weaken the adhesion force to an inner surface and can wipe off lightly The odor which piles up in a microwave oven can also be wiped away, and the activity of infiltrating water and a detergent into toilet implement material beforehand etc. becomes unnecessary, and working capacity improves. In addition, although the toilet implement in this description was mainly explained in full detail as an object for the toilet in a microwave oven, it can be widely used for a furniture, a towel, etc. for [such as a base business implement,] washing the circumference of a microwave oven, and in a refrigerator again.

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